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SILVICAL LEAFLET 33.

DIGGER PINE.

Pinus sabiniana Dougl.

Digger pine is of no commercial value, but is important silviculturally, since it grows at lower altitudes than other conifers in its range, and extends forest conditions into the arid regions. It also forms a valuable soil cover on the foothills and lower slopes of watersheds.

RANGE, OCCURRENCE, AND ASSOCIATED SPECIES.

Digger pine is peculiar to California, and is found throughout the hot interior valleys of the Coast Range, and along the foothills of the Sierra Nevada Mountains. It is often missing in situations where it would be expected, so that there are many gaps in the range. In general, the altitudinal range is from 1,000 to 2,500 feet, although some groups are found as high as 4,200 feet and as low as 500 feet.

From 500 to 1,500 feet it associates with blue oak and other California oaks and chaparral. From 1,500 to 3,000 feet, where it is at its best development, it grows alone over the chaparral, while above 3,000 feet it is rare, and mixes with scattering open stands of yellow, Coulter, and knobcone pines below the true timber margin.

CLIMATE.

It is best adapted to the climate on the borders of the arid region, where the precipitation may be as low as 5 inches in dry years and temperature ranges are from 10° to 110° F.

HABIT.

Digger pine is a small tree, usually under 60 feet in height, and from 12 to 18 inches in diameter. Its crown is easily recognizable at a distance by its characteristic, very open branching, and by its scanty, gray-green foliage. The branches persist almost to the ground, and the bole is frequently crooked and has a rapid taper. The cones are large and heavy, and the seeds, which are frequently eaten by Indians, are large and rich. The cones usually remain on the tree several years after the seed has been shed.

ASSOCIATED SPECIES.

At elevations of less than 3,500 feet, Coulter pine appears singly or in groups, often growing over chaparral. Between 3,500 and 5,000 feet it grows in mixture with incense cedar, yellow pine, bigcone spruce, and oaks. At 5,500 feet sugar pine and white fir appear, and between 6,000 and 7,000 feet Coulter pine and bigcone spruce thin out and disappear.

HABIT.

Coulter pine rarely attains a height of 100 feet and is commonly much smaller—from 50 to 60 feet tall and from 12 to 15 inches in diameter. The bole is straight, but usually clear for less than 10 feet. The crown is sometimes dome-shaped, but rather less so than that of Jeffrey pine, with which it associates. The needles are long—from 8 to 14 inches—stiff, and gray-green in color. The cones are sessile and usually more than a foot long.

SOIL AND MOISTURE.

Coulter pine is not exacting as to soil. It grows well on very steep slopes with shallow, dry soil, but does best on warm, gravelly loam. Humus is not necessary for its development.

TOLERANCE.

It demands light, although early in life it is capable of standing the shade of chaparral.

REPRODUCTION.

It begins to bear cones at an early age (often when it is only 10 or 15 feet high), and the seed years apparently run in three-year cycles. The cones ripen in August, and as the scales open the winged seeds fall to the ground. The opening of the cones is often very slow and occasionally even in January some cones are still closed. The seeds are heavy and ordinarily fall close to the seed trees. The reproduction in the south is never dense and, on the whole, is only fair. In the northern part of its range, where the precipitation is greater, Coulter pine is aggressive in reseeding bare, rocky slopes which have been burned over.